

Abstract

Introduction The aim of the present meta-analysis was to determine the effect of the different incision designs used in apical surgery on periodontal parameters.

Methods An electronic search in Cochrane Library, Pubmed (MEDLINE), and Scopus was conducted on April 2020. Two independent investigators included clinical trials and prospective cohort studies comparing the influence of different incision designs used in apical surgery on gingival recession, periodontal probing depth, and clinical attachment level. A pairwise and network meta-analysis was performed in order to meta-analyze the direct and the indirect comparisons among the incision designs.

Results Six articles were included for the qualitative and the quantitative syntheses, involving a total of 401 teeth (372 patients). The pairwise meta-analysis did not reveal statistically significant differences between the incision designs in any of the outcomes evaluated. However, to reduce the amount of buccal gingival recession, the papilla base incision presented the highest probabilities of being ranked the most effective incision (85.7%), followed by submarginal incision (50.0%) and intrasulcular incision (14.3%).

Conclusion Regardless of the incision design used, the periodontal parameters did not statistically differ after apical surgery.

Clinical relevance Periodontal parameters did not significantly change despite the incision used in apical surgery. However, based on the results of the present review, the papilla base incision seems to be the best option to reduce the amount of buccal gingival recession.

Keywords Apical surgery · Periodontal healing · Incision design · Mucoperiosteal flap